



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,854	03/16/2005	Tobias Georg Tolle	DE 020213	1807

24737 7590 05/24/2006

PHILIPS INTELLECTUAL PROPERTY & STANDARDS  
P.O. BOX 3001  
BRIARCLIFF MANOR, NY 10510

EXAMINER
----------

LAXTON, GARY L

ART UNIT	PAPER NUMBER
----------	--------------

2838

DATE MAILED: 05/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

5/2

<b>Office Action Summary</b>	Application No. 10/527,854	Applicant(s) TOLLE ET AL.	
	Examiner Gary L. Laxton	Art Unit 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 March 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

### ***Specification***

2. The disclosure is objected to because of the following informalities: page 9 line 20 of the specification – “fig. 3(?)” [sic].

Appropriate correction is required.

3. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

4. Claims 1-11 are objected to because of the following informalities:

Claims 1 and 11 recite the limitation "a shoot through current" in lines 16 and 12 respectively. There is insufficient antecedent basis for this limitation in the claim. It is unclear whether the applicant is referring to the shoot through current mentioned in lines 14 and 10, respectively, or whether this is a second shoot through current. Claims 2-10 inherit the same through claim 1.

Claim 1 recites the limitation "the drive" in line 17. There is insufficient antecedent basis for this limitation in the claim. Claims 2-10 inherit the same through claim 1.

Claim 2 recites the limitation "a shoot through current" in lines 7 and 9. There is insufficient antecedent basis for this limitation in the claim. It is unclear which shoot through currents these limitations are referencing.

Claim 10 recites the limitation "the device" in lines 3 and 5. There is insufficient antecedent basis for this limitation in the claim. A control "device" was recited in claim 1.

Claim 10 recites the limitation "a freewheeling diode" in line 6. There is insufficient antecedent basis for this limitation in the claim. A freewheeling diode was recited in claim 1.

Claim 10 recites the limitation "a shoot through current" in line 11. There is insufficient antecedent basis for this limitation in the claim. A shoot through current was previously recited in claim 1.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 3 and 5-11 are rejected under 35 U.S.C. 102(a) as being anticipated by Bridge (US 6,396,250).

Bridge discloses first and second switching elements (e.g. 702, 704); inductor (e.g. 706); control device (e.g. 712, 714, 720, 722); freewheeling diode (e.g. 703); the control device determines the freewheeling diode is conducting (col. 4 lines 45+) and turns on the first switching device with respect to the turn off of the second device; moreover, the examiner considers the first device to be turned on “sooner” with respect to the turn off of the second device as claimed; means for measuring voltage (e.g. 710) to determine freewheeling conduction; dead time/protection period (e.g. fig 18).

7. Claims 1 and 3-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Rutter et al (US 6,661,208).

Rutter et al disclose first and second switching elements (e.g. 6, 8); inductor (e.g. 17); control device (e.g. 18 et al); freewheeling diode (e.g. 9); the control device determines the freewheeling diode is conducting (col. 4 lines 55+) and turns on the first switching device with respect to the turn off of the second device; moreover, the examiner considers the first device to be turned on “sooner” with respect to the turn off of the second device as claimed; means for measuring voltage (e.g. 40) to determine freewheeling conduction; dead time/protection period (e.g. fig 3).

8. Claims 1-4, 7, 10 and 11 rejected under 35 U.S.C. 102(e) as being anticipated by Matsuda et al (US 6,724,175).

Matsuda et al disclose first and second switching elements (e.g. Tr1, Tr2); inductor (e.g. L1); control device (e.g. 110); freewheeling diode (e.g. D1); the control device determines the freewheeling diode is conducting (VL) and turns on the first switching device with respect to the turn off of the second device; moreover, the examiner considers the first device to be turned on “sooner” with respect to the turn off of the second device as claimed; means for measuring voltage (e.g. VL) to determine freewheeling conduction; overlap (see figure 10).

***Allowable Subject Matter***

9. Claim 2 would be allowable if rewritten to overcome the objection(s) set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

Claim 2; prior art fails to disclose or suggest, inter alia, a converter circuit wherein the switching elements are driven such that they are simultaneously conducting during a period of overlap, and wherein the control device controls the duration of the period of overlap in that it is determined whether one of a shoot through current occurs or and the freewheeling diode is conducting, wherein, upon the occurrence of a shoot through current, the duration of the period of overlap is reduced, and, when the freewheeling diode is conducting, the duration of the period of overlap is increased.

***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

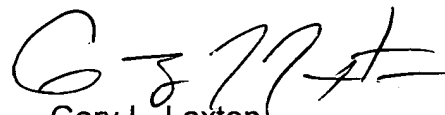
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2838

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (571) 272-2079. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on (571) 272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Gary L. Laxton  
Primary Examiner  
Art Unit 2838

5/16/2006